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CLASSIFICATION AND CORRELATION  
OF  
THE SOILS OF

**HAMILTON COUNTY**  
**INDIANA**

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**JULY 1976**

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U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
MIDWEST TECHNICAL SERVICE CENTER  
LINCOLN, NEBRASKA

UNITED STATES DEPARTMENT OF AGRICULTURE  
Soil Conservation Service  
Midwest Technical Service Center  
Lincoln, Nebraska 68508

Classification and Correlation  
of the Soils of  
Hamilton County, Indiana

This correlation was prepared by Robert I. Turner in consultation with William Hosteter, party leader, and Frank W. Sanders, state correlator, during the week of March 24-28, 1976. The final correlation is based on the first draft of the manuscript exclusive of tables and interpretive information, field correlation and notes, correlation samples and some laboratory data, and the interpretive information available on the SCS-Soils-5 forms. A draft of this final correlation was reviewed by the SCS and the cooperating agencies in Indiana before it was signed and distributed.

Symbol	Field Name	Approved Name	Manuscript Map Symbol
Br	Brookston silty clay loam	) Brookston silty clay loam	Br
CrA	Crosby silt loam, 0-3% slopes	) Crosby silt loam, 0 to 3 percent slopes	CrA
FnA	Fox loam, 0-2% slopes	) Fox loam, 0 to 2 percent slopes	FnA
FnB2	Fox loam, 2-6% slopes, eroded	) Fox loam, 2 to 6 percent slopes, eroded	FnB2
FxC3	Fox clay loam, 8-18% slopes, severely eroded	) Fox clay loam, 8 to 18 percent slopes, severely eroded	FxC3
FnC2	Fox loam, 6-12% slopes, eroded	)	
Ge	Genesee silt loam	Genesee silt loam	Ge

\*The first capital letter is the initial one of the soil name. The lower case letter that follows separates mapping units having names that begin with the same letter, except that it does not separate sloping or eroded phases. The second capital letter indicates the class of slope. Symbols without a slope letter are those with a slope range of 0 to 2 percent, or they are for miscellaneous areas with considerable range of slope. A final number 2 or 3 in the symbol indicates that the soil is eroded or severely eroded, respectively.

Symbol	Field Name	Approved Name	Manuscript Map Symbol
HeF	Hennepin loam, 18-50% slopes	) Hennepin loam, ) 18 to 50 percent slopes	HeF
Ho	Houghton muck	Houghton muck	Ho
MmA	Miami silt loam, 0-2% slopes	) Miami silt loam, ) 0 to 2 percent slopes	MmA
MmB2	Miami silt loam, 2-6% slopes, eroded	) Miami silt loam, ) 2 to 6 percent slopes, ) eroded	MmB2
MmC2	Miami silt loam, 6-12% slopes, eroded	) Miami silt loam, ) 6 to 12 percent slopes, ) eroded	MmC2
MmD2	Miami silt loam, 12-18% slopes, eroded	) Miami silt loam, ) 12 to 18 percent slopes, ) eroded	MmD2
MoC3	Miami clay loam, 6-12% slopes, severely eroded	) Miami clay loam, ) 6 to 12 percent slopes, ) severely eroded	MoC3
MoD3	Miami clay loam, 12-18% slopes, severely eroded	) Miami clay loam, ) 12 to 18 percent slopes, ) severely eroded	MoD3
Mx, MxA	Milton silt loam, 0-2% slopes	) Milton Variant silt loam, ) 0 to 2 percent slopes	MxA
NnA	Nineveh loam, 0-2% slopes	) Nineveh loam, ) 0 to 2 percent slopes	NnA
OcA	Ockley silt loam, 0-2% slopes	) Ockley silt loam, ) 0 to 2 percent slopes	OcA
OcB2	Ockley silt loam, 2-6% slopes, eroded	) Ockley silt loam, ) 2 to 6 percent slopes, ) eroded	OcB2
C.F. Or	Cut and fill land	) Orthents )	Or
Pa	Palms muck	Palms muck	Pa
Pn	Patton silty clay loam	) Patton silty clay loam	Pn

Symbol	Field Name	Approved Name	Manuscript Map Symbol
Ms	Patton silty clay	) Patton silty clay loam,	Ps
Ps	loam, limestone substratum	) limestone substratum )	
G.P. Gravel Pit Limestone Quarry	Gravel and sand pits	) Pits	Pt
Ra	Randolph silt loam	Randolph Variant silt loam	Ra
Ro	Ross loam	Ross loam	Ro
Sh	Shoals silt loam	Shoals silt loam	Sh
St	Sleeth loam	Sleeth loam	St
Sx	Sloan silty clay loam	) Sloan silty clay loam, ) sandy substratum	Sx
We	Westland silty clay loam	) Westland silty clay ) loam	We
Wh	Whitaker loam	Whitaker loam	Wh

Series established by this correlation:

None

Series dropped or made inactive:

None

#### Join Statements:

The soil survey of Hamilton County, Indiana, joins the modern published soil survey of Madison County, Indiana, and the modern completed but not published soil surveys of Marion County, Hancock County, and Boone County all in Indiana. The soil mapping delineations and the soil association areas have been joined. There are a few minor discrepancies in naming, which are the result of slight differences in soil survey legend, changes in the concepts of series as a result of recent developments in soil classification, and different proportions of series in some of the soil associations. A more detailed explanation is on file at the Principal Soil Correlator's office and in the Indiana State Office.

Soil survey interpretations have been coordinated, and those being used in this manuscript are in agreement with the latest information on the SCS-Soils-5 forms.

The location of the typical pedons has been checked to see that the locations are accurate and that the descriptions are located within delineations of the named soil.

#### Disposition of Field Sheets:

Field sheets, along with material needed to comply with Soils Memo-8, were sent to Cartographic for reproduction. The original field sheets will be returned to Indiana, where they will be held until needed by Lincoln Cartographic Unit for preparing the map overlays which Indiana will use for processing and finishing the soil survey maps.

#### Instructions for Map Compilation:

All cultural symbols to be retained for publication are noted, as are those to be omitted. Appropriate symbols will be assigned using SCS-Soils-37A, dated 3-75. This is in accordance with the instruction in Soils Advisory 10, dated May 2, 1975. Roads will be shown as per county road map, coded in accord with Soils-37A, which will be furnished with copies of the field sheets.

### SYMBOL LEGEND FOR CULTURAL FEATURES AND SPOT SYMBOLS CONVENTIONAL AND AD HOC SYMBOLS

Description	Symbol	Recommended Disposition
<u>HIGHWAYS AND ROADS</u>		
Divided (wide or variable median)		For information only as roads will be compiled from updated highway map coded in accordance with SCS-37A, 3/75
Good motor		
Poor motor		

#### INTERCHANGES

Existing (to scale; per photo image)		Delete
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#### ROUTE DESIGNATIONS





Interstate, U.S., state				80 US-1 MD-3	Retain
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#### RAILROADS

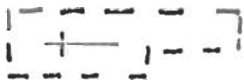
Single track		Retain
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Description	Symbol	Recommended Disposition
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BUILDINGS AND SIMILAR FEATURES

Farmstead, house (not shown in urban areas)		Retain
Church (to scale, if large)		Retain
School (to scale, if large)		Retain
Airport (small)		Retain

BOUNDARIES

Cemetery		Retain
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DRAINAGE FEATURESStreams, double-line

Perennial		Retain
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Streams, single-line

Perennial		Retain
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Intermittent

Crossable with tillage implements		Use latest standard map compilation procedure
Not crossable with tillage implements		

Drainage end or alluvial fan		Retain
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Lakes, ponds and reservoirs

Perennial		Retain
Intermittent		Retain
		Retain
		Retain
Wet spot		Retain

DAMS

Very large (to scale)		Retain
Small; stock or farm pond		Delete

Description	Symbol	Recommended Disposition
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RELIEF FEATURES

## Escarpments

Other than bedrock



Retain

Short steep slope



Retain

Gravel pit



Retain

Quarry, limestone



Retain

Levee (ticks on water side)



Retain

SPECIAL SOIL SYMBOLS

Gravel spot, area



Retain

Sand spot, area



Retain

SOIL AREA BOUNDARIES AND SYMBOLS

Retain

SUGGESTED AD HOC SYMBOLS

Overwash (10 to 40 inches)



Retain

Crosby spot &lt; 3 ac

Retain,  
use ~~\*~~

Miami spot &lt; 3 ac

Retain,  
use #

Approved: July 27, 1976

Maurice Stout, Jr.  
Head, Soil Correlation Staff  
Midwest TSC

CONVERSION LEGEND RELATING FIELD MAP SYMBOLS  
TO PUBLICATION SYMBOLS

<u>Field Symbol</u>	<u>Publication Symbol</u>
Br	Br
CrA	CrA
FnA	FnA
FnB2	FnB2
FnC2	FxC3
FxC3	FxC3
Ge	Ge
HeF	HeF
Ho	Ho
MmA	MmA
MmB2	MmB2
MmC2	MmC2
MmD2	MmD2
MoC3	MoC3
MoD3	MoD3
Mx	MxA
MxA	MxA
NnA	NnA
OcA	OcA
OcB2	OcB2
Or	Or
Pa	Pa
Pn	Pn
Ms	Ps
Ps	Ps
Ra	Ra
Ro	Ro
Sh	Sh
St	St
Sx	Sx
We	We
Wh	Wh
C.F.	Or
G.P.	Pt
Gravel Pit	Pt
Limestone Quarry	Pt



## CLASSIFICATION OF PEDONS SAMPLED FOR LABORATORY ANALYSIS

## List of Soil Pedons Characterized at Purdue Soils Laboratory

Name Pedon was Sampled Under	Survey Number	Lab. Numbers	Series They Classify In	Correlation Name
Genesee silt loam	S72IN29-1(1-7)	119-125	Genesee, taxadjunct calcareous family	Genesee
Milford sicl	S73IN29-2(1-9)	102-110	Patton	Patton
Patton sicl	S73IN29-1(1-8)	94-101	Patton	Patton
Westland sicl	S73IN57-1(1-8)	354-361	Westland	Westland
Sleeth 1	S73IN29-2(1-8)	362-369	Sleeth	Sleeth
Westland	S74IN57-1(1-8)	346-353	Westland	Westland
Fox 1	S75IN57-1(1-7)	1047-1055	Fox	Fox
Milton sil	S75IN57-3(1-6)	2015-2020	None	Milton Variant
Randolph sil	S75IN57-1(1-7)	1472-1478	None	Randolph Variant
Millsdale sicl	S75IN57-2(1-5)	1611-1615	Patton	Patton sicl, limestone substratum

Notes to Accompany  
Classification and Correlation  
of the Soils of  
Hamilton County, Indiana

by  
Robert I. Turner

BROOKSTON SERIES

Brookston soils as described in this soil survey area appear to have a very weak argillic horizon. In fact, there is probably a large portion of inclusions which fail the definition of an argillic horizon. As this appears to be a problem with Brookston as it is mapped everywhere, we are not calling these soils taxadjuncts at this time.

CROSBY SERIES

Crosby soils are in the least acid and the least clayey part in the range of the Crosby series.

FOX SERIES

Fox soils appear to be in the most gravelly part of the range of the Fox series.

GENESEE SERIES

Genesee soils are taxadjuncts to the Genesee series because they contain free carbonates and effervesce throughout the profile. Additionally, Genesee soils contain minimal amounts of clay and minimal amounts of sand coarser than very fine allowed in their definition in the fine-loamy family.

MIAMI SERIES

Two mapping units previously named Miami complex have been renamed as Miami clay loam. The surface textures are dominantly clay loam, and the soils are dominantly similar to the Miami series in terms of use and management. The mapping unit descriptions will note the inclusions of similar soils with slightly thinner sola than allowed in the definition of the Miami series and also the inclusion of contrasting soils which are calcareous nearly to the surface. The latter would be similar to the Hennepin series in terms of use and management.

MILTON SERIES

Milton Variant soils are variants to the Milton series, as they contain more coarse fragments, typically have C horizons and have hard bedrock at depths of slightly more than 40 inches all of which are outside the defined range of the Milton series.

OCKLEY SERIES

Ockley soils have a minimal content of coarse fragments in the lower part of the solum as compared to the defined range of the Ockley series, but we did not call them taxadjuncts. The range in coarse fragment content for the Ockley series definition should be expanded to include soils with less coarse fragments than as they are now defined.

PATTON SERIES

Patton soils are in the most clayey part of the range for the Patton series. The upper portion of the 10- to 40-inch control section is commonly medium or heavy silty clay loam and in some cases with thin subhorizons of light silty clay. However, the average texture of the 10- to 40-inch section is less than 35 percent clay. We believe that this is part of the range of the Patton series and have not identified these soils as taxadjuncts. A few hundred acres of soils with solums similar to those of the Patton series but which are underlain by limestone bedrock within depths of 40 to 50 inches are being correlated as a limestone substratum phase of the Patton series. A separate SCS-Soils-5 form will be provided and input into the computer-stored information for this phase of the Patton series.

RANDOLPH SERIES

Randolph Variant soils are variants of the Randolph series as they contain slightly less clay throughout the solum and they lack a lithic contact within depths of 40 inches. Because of the position of these soils in the landscape and because of the variable depth to hard bedrock, which is shallower than 40 inches in some areas, it seemed more appropriate to identify the few hundred acres of this soil as a variant of the Randolph series than to name it as a limestone substratum phase of the Crosier series, which would be the other alternative.

SHOALS SERIES

Shoals soils in this survey area contain more sand and gravel with its upper boundary someplace within the 40- to 60-inch section used for determining engineering properties than is typical for the Shoals series.

SLEETH SERIES

Sleeth soils in this survey area contain less gravel in the soil solum and tend to have less gravel in the C horizon than is typical for the Sleeth series. Some adjustments need to be made in the ranges given in the soil properties table in the SCS-Soils-5 form. These will be taken care of by Indiana. Sleeth soils are also in the least acid part of the range in reaction for the sleeth series. However, we did not call them taxadjuncts on this basis.

SLOAN SERIES

Sloan soils typically contain dominantly sand and gravel between 40 and 60 inches in this survey area and are named as a sand substratum phase of the Sloan series. Because these soils are poorly drained, the presence of this sand and gravel has a minor influence on the use of these soils for agricultural purposes, but it is significant to some of the interpretations that could be made for other uses not related to agriculture.

WESTLAND SERIES

Westland soils contain the minimum amount of gravel allowed in the range of the Westland series. In this survey area the solums of the Westland series contain approximately similar amounts of gravel down to depths of about three feet as do the Whitaker series of this survey area. However, the B3 horizons contain appreciable more gravel than do those of the Whitaker series, and the C horizons are an excellent source of gravel in the Westland series and are unsuited as a source of gravel in the Whitaker series. It seemed more appropriate to continue with both series in this survey area than it was to use only one series and have two phases based upon the gravel content in this area.

## CLASSIFICATION OF SOILS

<u>Soil Series</u>	<u>Classification</u>
Brookston	Typic Argiaquolls; fine-loamy, mixed, mesic
Crosby	Aeric Ochraqualfs; fine, mixed, mesic
Fox	Typic Hapludaifs; fine-loamy over sandy or sandy-skeletal, mixed, mesic
Genesee*1/	Typic Udifluvents; fine-loamy, mixed, nonacid mesic
Hennepin	Typic Eutrochrepts; fine-loamy, mixed, mesic
Houghton	Typic Medisaprists; euic, mesic
Miami	Typic HapludalFs; fine-loamy, mixed, mesic
Milton Variant	Typic HapludalFs; fine, mixed, mesic
Nineveh	Typic Argiudolls; fine-loamy over sandy or sandy-skeletal, mixed, mesic
Ockley	Typic HapludalFs; fine-loamy, mixed, mesic
Orthents	Typic Udorthents; loamy, mixed, nonacid, mesic
Palms	Terric Medisaprists; loamy, mixed, euic, mesic
Patton	Typic Haplaquolls; fine-silty, mixed, mesic
Randolph Variant	Aeric Ochraqualfs; fine-loamy, mixed, mesic
Ross	Cumulic Hapludolls; fine-loamy, mixed, mesic
Shoals	Aeric Fluvaquents; fine-loamy, mixed, nonacid, mesic
Sleeth	Aeric Ochraqualfs; fine-loamy, mixed, mesic
Sloan	Fluvaquentic Haplaquolls; fine-loamy, mixed, mesic
Westland	Typic Argiaquolls; fine-loamy, mixed, mesic
Whitaker	Aeric Ochraqualfs; fine-loamy, mixed, mesic

\*These soils are taxadjuncts--See Notes to Accompany Classification and Correlation of Soils of Hamilton County, Indiana for details.

1/ Typic Udifluvents; fine-loamy, mixed (calcareous), mesic